AMENDMENTS TO THE CLAIMS

Presented below is a complete set of claims with current status indicators.

1. (currently amended) An implantable medical device comprising:

a device operative to monitor cardiac rhythm;

an implantable housing having therein a temporary memory operative to record diagnostic data corresponding to the cardiac rhythm; and a long-term memory interfacing with the temporary memory and operative to record diagnostic data stored in the temporary memory; and

a processor operative to:

evaluate the cardiac rhythm for the detection of predetermined recording triggers indicative of an impending cardiac arrhythmia, wherein the cardiac arrhythmia indicated as impending, is not currently present;

control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of an impending cardiac arrhythmia, wherein the cardiac arrhythmia indicated as impending, is not currently present and no data is transferred from the temporary memory and recorded in the long-term memory until it has been determined that a cardiac arrhythmia did actually occur; and

adaptively modify the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data in the temporary memory.

2. (previously presented) The device of claim 1 wherein the diagnostic data to be recorded includes one or more of: intracardiac electrograms (IEGMs) and event records.

3. (previously presented) The device of claim 1 wherein to control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of predetermined recording triggers, the processor is further operative to:

receive initial trigger parameters for triggering the recording of diagnostic data in the temporary memory;

monitor cardiac rhythm; and

selectively control the recording of diagnostic data in the temporary memory based on the cardiac rhythm and the trigger parameters.

4. (previously presented) The device of claim 3 wherein the trigger parameters include threshold values against which features of the cardiac rhythm are compared.

5. (previously presented) The device of claim 4 wherein the threshold values include one or more of: heart rate variability threshold values, morphology threshold values, and fast beat threshold values.

6. (previously presented) The device of claim 4 wherein to adaptively modify the recording triggers the processor is further operative to selectively adjust the threshold values so as to reduce the likelihood of any unnecessary recording of diagnostic data in the temporary memory.

7. (previously presented) The device of claim 1 wherein to adaptively modify the recording triggers the processor is further operative to:

determine whether the recording triggers were properly indicative of an impending cardiac arrhythmia; and

if not, adjust the recording triggers to more effectively an impending cardiac arrhythmia.

8. (previously presented) The device of claim 7 wherein the recording triggers are indicative of the onset of an arrhythmia and wherein the recording triggers are adjusted based upon whether an arrhythmia in fact occurred.

9. (previously presented) The device of claim 1 wherein to control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of predetermined recording triggers indicative of an impending cardiac arrhythmia, the processor is further operative to:

evaluate the likelihood of an impending cardiac arrhythmia; and

control the recording of diagnostic data based upon such an evaluation.

10. (previously presented) The device of claim 9 wherein to evaluate the likelihood of an impending cardiac arrhythmia, the processor is further operative to identify periods of time wherein there is an elevated risk of an arrhythmia and wherein to control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of predetermined recording triggers indicative of an impending cardiac arrhythmia, the processor is further operative to record the data in the temporary memory during the period of time wherein there is an elevated risk of an arrhythmia.

11. (previously presented) The device of claim 10 wherein to identify periods of time wherein there is an elevated risk of an arrhythmia the processor is further operative to monitor heart rate variability and to identify periods of time with reduced heart rate variability.

12. (previously presented) The device of claim 9 wherein to evaluate the likelihood of an impending cardiac arrhythmia, the processor is further operative to predict the onset of an arrhythmia and wherein to control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of predetermined recording triggers, the processor is further operative to activate recording in the temporary memory prior to the predicted onset of the arrhythmia.

13. (previously presented) The device of claim 12 wherein to predict the onset of an arrhythmia the processor is further operative to monitor cardiac rhythm.

14. (previously presented) The device of claim 13 wherein to monitor cardiac rhythm to predict the onset of an arrhythmia the processor is further operative to:

examine the morphology of heart beats and predict the onset of an arrhythmia based on detection of a significant change in morphology.

15. (previously presented) The device of claim 8 wherein to evaluate the likelihood of an impending cardiac arrhythmia, the processor is further operative to detect the onset of an arrhythmia and wherein to control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of

predetermined recording triggers, the processor is further operative to activate recording in the temporary memory upon detection of the onset of the arrhythmia.

16. (previously presented) The device of claim 15 wherein to monitor cardiac rhythm to detect the onset of an arrhythmia the processor is further operative to:

count a number of beats occurring at a rate above a predetermined rate threshold and detect the onset of an arrhythmia based on detection of a predetermined number of beats having a rate above the rate threshold.

17. (previously presented) The device of claim 16 wherein the predetermined number of beats having a rate above the rate threshold is in the range of one to three beats.

18. (previously presented) The device of claim 16 wherein the processor is further operative to confirm that an arrhythmia actually occurred and, if the arrhythmia is not confirmed, deactivate the recording of diagnostic data in the temporary memory.

19. (previously presented) The device of claim 15 wherein to adaptively modify the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data in the temporary memory the processor is further operative to selectively increment the number of beats required to trigger activation of the recording of diagnostic data in the temporary memory, if the arrhythmia is not confirmed.

20. (previously presented) The device of claim 19 wherein the processor is further operative to selectively increment the number of beats required to trigger activation of the recording of diagnostic data in the temporary memory upon detection of two consecutive episodes wherein the recording of diagnostic data was activated but the arrhythmia was not subsequently confirmed.

21. (canceled)

22. (canceled)

23. (previously presented) A method performed by an implantable medical device, the method comprising:

evaluating the likelihood of an impending cardiac arrhythmia, wherein an impending cardiac arrhythmia is an arrhythmia that is not currently present and wherein diagnostic medical data is to be recorded in an implanted long-term memory;

controlling the recording of diagnostic data based upon such an evaluation such that diagnostic medical data is first recorded in an implanted temporary memory only after it is determined that a cardiac arrhythmia that is not currently present is likely to arise, wherein the implanted temporary memory interfaces with the implanted long-term memory;

determining whether the impending cardiac arrhythmia actually occurred;

if such cardiac arrhythmia did actually occur, transferring the diagnostic data recorded in the implanted temporary memory to the implanted long-term memory; and

if such cardiac arrhythmia did not occur, adaptively modifying parameters employed to evaluate the likelihood of such cardiac arrhythmia so as to reduce the risk of unnecessarily recording of diagnostic data in the implanted temporary memory.

24. (currently amended) An implantable medical device comprising:

an implantable housing having therein a temporary memory operative to record diagnostic medical data; and a long-term memory interfacing with the temporary memory and operative to record at least a portion of the diagnostic data stored in the temporary memory; and

an adaptive-based diagnostic controller operative to control the recording of diagnostic data such that no data is recorded in the temporary memory until the detection of predetermined recording triggers indicative of an impending cardiac arrhythmia, wherein the cardiac arrhythmia indicated as impending, is not currently present, and no data is transferred from the temporary memory and recorded in the long-term memory until it has been determined that a cardiac arrhythmia did actually occur and further operative to adaptively modifying the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data in the temporary memory.

25. (currently amended) A system for adaptively controlling the recording of diagnostic data within an implantable medical device comprising:

an implantable housing having therein, means for temporarily storing data; and means for long-term storage of data stored in the means for temporarily storing data, wherein the means for temporarily storing data interfaces with the means for long-term storage of data;

means for controlling the recording of diagnostic data within the means for temporarily storing data such that no data is stored in the means for temporarily storing data until the detection of predetermined recording triggers indicative of an impending cardiac arrhythmia, wherein the cardiac arrhythmia indicated as impending, is not currently present and no data is transferred from the means for temporarily storing data and recorded in the means for long-term storage of data until it has been determined that a cardiac arrhythmia did actually occur; and

means for adaptively modifying the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data in the means for temporarily storing data.